

-2-

Application Serial No. 09/285,899
Attorney Docket No. 0756-1950

at least one thin film transistor being formed over the first substrate, said thin film transistor including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region and a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

wherein the channel region, the source and drain region of said one thin film transistor is formed in a semiconductor island;

an organic resin film formed over said first substrate to provide a leveled upper surface over said first substrate, said organic resin film covering said thin film transistor;

a pixel electrode formed on said leveled upper surface, said pixel electrode being electrically connected to said thin film transistor through an opening formed in said organic resin film;

a liquid crystal material having ferroelectricity and being formed between the first substrate and the second substrate;

an opposed electrode formed over said second substrate and opposed to said pixel electrode with said liquid crystal material interposed therebetween.

13. (Amended) A device having at least one liquid crystal panel, said liquid crystal panel comprising:

a first substrate having an insulating surface;

a second substrate being opposed to the first substrate;

at least one semiconductor element being formed over the first substrate, said semiconductor element including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region and a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

-3-

Application Serial No. 09/285,899
Attorney Docket No. 0756-1950

wherein the channel region, the source and drain region of said one semiconductor element is formed in a semiconductor island;

an organic resin film formed over said first substrate to provide a leveled upper surface over said first substrate, said organic resin film covering said semiconductor element;

a pixel electrode formed on said leveled upper surface, said pixel electrode being electrically connected to said semiconductor element through an opening formed in said organic resin film;

a liquid crystal material having ferroelectricity and being formed between the first substrate and the second substrate, and

an opposed electrode formed over said second substrate and opposed to said pixel electrode with said liquid crystal material interposed therebetween.

21. (Amended) A television comprising:

a tuner for receiving television radio wave;

a liquid crystal panel operationally connected to said tuner, said liquid crystal panel comprising:

a first substrate having an insulating surface;

a second substrate being opposed to the first substrate;

at least one thin film transistor being formed over the first substrate, said thin film transistor including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region and a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

wherein the channel region, the source and drain region of said one thin film transistor is formed in a semiconductor island;

-4-

Application Serial No. 09/285,899
Attorney Docket No. 0756-1950

an organic resin film formed over said first substrate to provide a leveled upper surface over said first substrate, said organic resin film covering said thin film transistor;

a pixel electrode formed on said leveled upper surface, said pixel electrode being electrically connected to said thin film transistor through an opening formed in said organic resin film;

a liquid crystal material having ferroelectricity and being formed between the first substrate and the second substrate;

an opposed electrode formed over said second substrate and opposed to said pixel electrode with said liquid crystal material interposed therebetween.

33. (Amended) A portable computer having a liquid crystal panel, said liquid crystal panel comprising:

a first substrate having an insulating surface;

a second substrate being opposed to the first substrate;

at least one thin film transistor being formed over the first substrate, said thin film transistor including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region and a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

wherein the channel region, the source and drain region of said one thin film transistor is formed in a semiconductor island;

an organic resin film formed over said first substrate to provide a leveled upper surface over said first substrate, said organic resin film covering said thin film transistor;

a pixel electrode formed on said leveled upper surface, said pixel electrode being electrically connected to said thin film transistor through an opening formed in said organic resin film;

-5-

Application Serial No. 09/285,899
Attorney Docket No. 0756-1950

a liquid crystal material having ferroelectricity and being formed between the first substrate and the second substrate;

an opposed electrode formed over said second substrate and opposed to said pixel electrode with said liquid crystal material interposed therebetween.

57. (Amended) A device having at least one liquid crystal panel, said liquid crystal panel comprising:

a first substrate having an insulating surface;

a second substrate opposed to said first substrate;

at least one thin film transistor formed over said first substrate, said thin film transistor including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region and a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

wherein said channel region, said source and drain region of said one thin film transistor is formed in a semiconductor island;

a leveling film formed over said first substrate to provide a leveled upper surface over said first substrate, said leveling film covering said thin film transistor;

a pixel electrode formed on said leveled upper surface, said pixel electrode electrically connected to said thin film transistor through an opening formed in said leveling film;

a liquid crystal material having ferroelectricity and being formed between said first substrate and said second substrate;

an opposed electrode formed over said second substrate and opposed to said pixel electrode with said liquid crystal material interposed therebetween.

58. (Amended) A television comprising:

a tuner for receiving television radio wave;

-6-

Application Serial No. 09/285,899
Attorney Docket No. 0756-1950

a liquid crystal panel operationally connected to said tuner, said liquid crystal panel comprising:

a first substrate having an insulating surface;

a second substrate opposed to said first substrate;

at least one thin film transistor being formed over said first substrate, said thin film transistor including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region and a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

wherein said channel region, said source and drain regions of said one thin film transistor is formed in a semiconductor island;

a leveling film formed over said first substrate to provide a leveled upper surface over said first substrate, said leveling film covering said thin film transistor;

a pixel electrode formed on said leveled upper surface, said pixel electrode electrically connected to said thin film transistor through an opening formed in said leveling film;

a liquid crystal material having ferroelectricity and being formed between said first substrate and said second substrate;

an opposed electrode formed over said second substrate and opposed to said pixel electrode with said liquid crystal material interposed therebetween.

59. (Amended) A portable computer having a liquid crystal panel, said liquid crystal panel comprising:

a first substrate having an insulating surface;

a second substrate opposed to said first substrate;

at least one thin film transistor being formed over said first substrate, said thin film transistor including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region and

-7-

Application Serial No. 09/285,899
Attorney Docket No. 0756-1950

a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

wherein said channel region, said source and drain regions of said one thin film transistor is formed in a semiconductor island;

a leveling film formed over said first substrate to provide a leveled upper surface over said first substrate, said leveling film covering said thin film transistor;

a pixel electrode formed on said leveled upper surface, said pixel electrode being electrically connected to said thin film transistor through an opening formed in said leveling film;

a liquid crystal material having ferroelectricity and being formed between said first substrate and said second substrate;

an opposed electrode formed over said second substrate and opposed to said pixel electrode with said liquid crystal material interposed therebetween.

Please add new claims 66-97 as follows.

--66. A projector having at least one liquid crystal panel, said liquid crystal panel comprising:

a first substrate having an insulating surface;

a second substrate opposed to said first substrate;

at least one thin film transistor being formed over said first substrate, said thin film transistor including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region and a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

wherein said channel region, said source and drain regions of said one thin film transistor is formed in a semiconductor island;

-8-

Application Serial No. 09/285,899
Attorney Docket No. 0756-1950

a leveling film formed over said first substrate to provide a leveled upper surface over said first substrate, said leveling film covering said thin film transistor;

a pixel electrode formed on said leveled upper surface, said pixel electrode being electrically connected to said thin film transistor through an opening formed in said leveling film;

a liquid crystal material having ferroelectricity and being formed between said first substrate and said second substrate;

an opposed electrode formed over said second substrate and opposed to said pixel electrode with said liquid crystal material interposed therebetween.

67. A projector according to claim 66, wherein said semiconductor island is a crystalline semiconductor island.

68. A projector according to claim 66, wherein said pixel electrode is transparent.

69. A device having at least one liquid crystal panel, said liquid crystal panel comprising:

a first substrate having an insulating surface;

a second substrate being opposed to the first substrate;

at least one thin film transistor being formed over the first substrate, said thin film transistor including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region and a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

wherein the channel region, the source and drain region of said one thin film transistor is formed in a semiconductor island;

-9-

Application Serial No. 09/285,899
Attorney Docket No. 0756-1950

an organic resin film formed over said first substrate to provide a leveled upper surface over said first substrate, said organic resin film covering said thin film transistor;

a pixel electrode formed on said leveled upper surface, said pixel electrode being electrically connected to said thin film transistor through an opening formed in said organic resin film;

a liquid crystal material having anti-ferroelectricity and being formed between the first substrate and the second substrate;

an opposed electrode formed over said second substrate and opposed to said pixel electrode with said liquid crystal material interposed therebetween.

70. A device according to claim 69, wherein said organic resin film comprises polyimide.

71. A device according to claim 69, wherein said pixel electrode is transparent.

72. A device according to claim 69, wherein said thin film transistor is a top-gate type in which said gate electrode is located above said channel region.

73. A television comprising:
a tuner for receiving television radio wave;
a liquid crystal panel operationally connected to said tuner, said liquid crystal panel comprising:
a first substrate having an insulating surface;
a second substrate being opposed to the first substrate;
at least one thin film transistor being formed over the first substrate, said thin film transistor including at least a channel region, source and drain regions with said

-10-

Application Serial No. 09/285,899
Attorney Docket No. 0756-1950

channel region therebetween, a gate insulating film adjacent to said channel region and a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

wherein the channel region, the source and drain region of said one thin film transistor is formed in a semiconductor island;

an organic resin film formed over said first substrate to provide a leveled upper surface over said first substrate, said organic resin film covering said thin film transistor;

a pixel electrode formed on said leveled upper surface, said pixel electrode being electrically connected to said thin film transistor through an opening formed in said organic resin film;

a liquid crystal material having anti-ferroelectricity and being formed between the first substrate and the second substrate;

an opposed electrode formed over said second substrate and opposed to said pixel electrode with said liquid crystal material interposed therebetween.

74. A television according to claim 73, wherein said organic resin film comprises polyimide.

75. A television according to claim 73, wherein said pixel electrode is transparent.

76. A television according to claim 73, wherein said thin film transistor is a top-gate type in which said gate electrode is located above said channel region.

77. A portable computer having a liquid crystal panel, said liquid crystal panel comprising:

a first substrate having an insulating surface;

a second substrate being opposed to the first substrate;

at least one thin film transistor being formed over the first substrate, said thin film transistor including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region and a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

wherein the channel region, the source and drain region of said one thin film transistor is formed in a semiconductor island;

an organic resin film formed over said first substrate to provide a leveled upper surface over said first substrate, said organic resin film covering said thin film transistor;

a pixel electrode formed on said leveled upper surface, said pixel electrode being electrically connected to said thin film transistor through an opening formed in said organic resin film;

a liquid crystal material having anti-ferroelectricity and being formed between the first substrate and the second substrate;

an opposed electrode formed over said second substrate and opposed to said pixel electrode with said liquid crystal material interposed therebetween.

78. A portable computer according to claim 77, wherein said organic resin film comprises polyimide.

79. A portable computer according to claim 77, wherein said pixel electrode is transparent.

80. A portable computer according to claim 77, wherein said thin film transistor is a top-gate type in which said gate electrode is located above said channel region.

-12-

Application Serial No. 09/285,899
Attorney Docket No. 0756-1950

81. A device having at least one liquid crystal panel, said liquid crystal panel comprising:

a first substrate having an insulating surface;

a second substrate opposed to said first substrate;

at least one thin film transistor formed over said first substrate, said thin film transistor including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region and a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

wherein said channel region, said source and drain region of said one thin film transistor is formed in a semiconductor island;

a leveling film formed over said first substrate to provide a leveled upper surface over said first substrate, said leveling film covering said thin film transistor;

a pixel electrode formed on said leveled upper surface, said pixel electrode electrically connected to said thin film transistor through an opening formed in said leveling film;

a liquid crystal material having anti-ferroelectricity and being formed between said first substrate and said second substrate;

an opposed electrode formed over said second substrate and opposed to said pixel electrode with said liquid crystal material interposed therebetween.

82. A device according to claim 81, wherein said pixel electrode is transparent.

83. A device according to claim 81, wherein said thin film transistor is a top-gate type in which said gate electrode is located above said channel region.

-13-

Application Serial No. 09/285,899
Attorney Docket No. 0756-1950

84. A device according to claim 81, wherein said semiconductor island is a crystalline semiconductor island.

85. A television comprising:

- a tuner for receiving television radio wave;
- a liquid crystal panel operationally connected to said tuner, said liquid crystal panel comprising:
 - a first substrate having an insulating surface;
 - a second substrate opposed to said first substrate;
 - at least one thin film transistor being formed over said first substrate, said thin film transistor including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region and a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;
 - wherein said channel region, said source and drain regions of said one thin film transistor is formed in a semiconductor island;
 - a leveling film formed over said first substrate to provide a leveled upper surface over said first substrate, said leveling film covering said thin film transistor;
 - a pixel electrode formed on said leveled upper surface, said pixel electrode electrically connected to said thin film transistor through an opening formed in said leveling film;
 - a liquid crystal material having anti-ferroelectricity and being formed between said first substrate and said second substrate;
 - an opposed electrode formed over said second substrate and opposed to said pixel electrode with said liquid crystal material interposed therebetween.

86. A television according to claim 81, wherein said pixel electrode is transparent.

-14-

Application Serial No. 09/285,899
Attorney Docket No. 0756-1950

87. A television according to claim 81, wherein said thin film transistor is a top-gate type in which said gate electrode is located above said channel region.

88. A television according to claim 81, wherein said semiconductor island is a crystalline semiconductor island.

89. A portable computer having a liquid crystal panel, said liquid crystal panel comprising:

a first substrate having an insulating surface;

a second substrate opposed to said first substrate;

at least one thin film transistor being formed over said first substrate, said thin film transistor including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region and a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

wherein said channel region, said source and drain regions of said one thin film transistor is formed in a semiconductor island;

a leveling film formed over said first substrate to provide a leveled upper surface over said first substrate, said leveling film covering said thin film transistor;

a pixel electrode formed on said leveled upper surface, said pixel electrode being electrically connected to said thin film transistor through an opening formed in said leveling film;

a liquid crystal material having anti-ferroelectricity and being formed between said first substrate and said second substrate;

an opposed electrode formed over said second substrate and opposed to said pixel electrode with said liquid crystal material interposed therebetween.

-15-

Application Serial No. 09/285,899
Attorney Docket No. 0756-1950

90. A portable computer according to claim 89, wherein said pixel electrode is transparent.

91. A portable computer according to claim 89, wherein said thin film transistor is a top-gate type in which said gate electrode is located above said channel region.

92. A portable computer according to claim 89, wherein said semiconductor island is a crystalline semiconductor island.

93. A projector having at least one liquid crystal panel, said liquid crystal panel comprising:

a first substrate having an insulating surface;

a second substrate opposed to said first substrate;

at least one thin film transistor being formed over said first substrate, said thin film transistor including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region and a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

wherein said channel region, said source and drain regions of said one thin film transistor is formed in a semiconductor island;

a leveling film formed over said first substrate to provide a leveled upper surface over said first substrate, said leveling film covering said thin film transistor;

a pixel electrode formed on said leveled upper surface, said pixel electrode being electrically connected to said thin film transistor through an opening formed in said leveling film;

a liquid crystal material having anti-ferroelectricity and being formed between said first substrate and said second substrate;